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8 JUN 1988

MEMORANDUM FOR: Deputy Director for Administration

FROM: Edward J. Maloney
Director of Information Technology

SUBJECT: CAMS Extension Initiative (CEI)

REFERENCE: DDA Memorandum 88-1141, 27 May 88, Subject:
"Support of the CAMS System"

1. The information supplied in Attachment A responds to your questions in the reference with regard to the CAMS Extension Initiative (CEI). The CEI was developed in response to your direction, given the concern that the RMS IOC date would be delayed. As a result of that direction, the CAMS Program Office and the OIT Engineering Group (EG) met to discuss the life expectancy. Out of those discussions evolved various alternatives, all based on a 1995 RMS IOC and keeping the P/S operational through at least that time. The CEI reflects the moderate response, that is a) that certain technical risk areas will be alleviated (e.g., replace the Delta Datas and convert GIMS-III to run under IBM's new VM/XA operating system); and b) that performance standards will be maintained in the face of increasing numbers of imagery requirements and expanding collection system capabilities.

2. The concern over the RMS schedule has proved accurate. As you can see from the DRAFT memorandum (Attachment B) from the Chairman, COMIREX to the Executive Director and the Comptroller in support of CEI, Wayne Strand has acknowledged the delay of the RMS IOC until 1995.

3. The 16 May version of the CEI was subsequently supplanted by a 19 May revision (Attachment C) which was provided to your office. This update reflects refined cost estimates and a more explicit impact assessment as a result of further data becoming available. The CEI includes the FY89 unfunded requirement for \$3.9 million. Attachment C also overlays the CEI on the planned CAMS budget through FY94.

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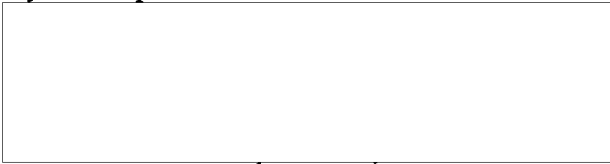
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SUBJECT: CAMS Extension Initiative (CEI)

4. Note that CAMS is the only application supported by the GIMS-III data base management system (DBMS). Other Agency GIMS applications run on the older GIMS-II DBMS and under a different IBM operating system. These applications will be transitioned to a new DBMS, on an as yet to be determined schedule. GIMS-II and GIMS-III conversion issues are not related.

5. The CAMS Program Office, in conjunction with OIT/EG, has developed a briefing which outlines in greater detail the CAMS modernization planning under CEI. I would be happy to have the Program Office brief you and/or your staff if desired. This planning has been accomplished largely in isolation, however. OIT has had no visibility into the planning process for RMS. As a consequence, OIT remains uncertain of what requirements will be laid on us for the 1990s or what the impact of those requirements will be on our funding profiles. Until the relationship of COMIREX and OD&E with this Directorate is one of improved communications and shared data, planning will continue to be difficult, at best, or impossible.

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Edward J. Maloney
Director of Information Technology

Attachments:
As stated

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SUBJECT: CAMS Extension Initiative (CEI)

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Attachment A

3 June 1988

REFERENCE: DDA Memorandum 88-1141, 27 May 88, Subject:
"Support of the CAMS System"

1. Question: "How would (funding profiles for the CAMS Life Extension initiative) change if the RMS delivery is delayed beyond 1994?"

Response: CEI was predicated on a two-year delay of RMS. The profile reflects upgrades to the system required to take it past the original plan of 1993 and out through 1995. No change in the initiative is required unless there is an expectation that CAMS would be operated substantially beyond 1995.

2. Question: "What alternative profiles do we have for FY89 through 1992, e.g., when do we have to convert the GIMS System and how long will the Delta Data terminals last?"

Response: CAMS needs to be moved on to an operating system supported by IBM, i.e., VM/XA, for the reasons specified in the response to question 3, below. There are two alternative paths to accomplishing this move: Alternative A is to convert GIMS-III to run under VM/XA, at an approximate cost of \$7 million in FY89 through FY91. Alternative B is to totally replace GIMS-III with a commercially available DBMS compatible with any future IBM operating system. Detailed cost analysis of alternative B has not been done, however, we estimate the cost at a rough-order-of-magnitude to be \$12-16 million over and above the alternative A (CEI) cost. Moreover, replacement would be difficult to accomplish within an acceptable time frame. We do not recommend alternative B because of its high near-term costs and the advent of RMS in 1995. The only circumstance that would warrant this extraordinary expense would be as an evolutionary path to RMS, something we have long advocated be seriously considered.

We do recommend alternative A, converting GIMS-III and the CAMS application software to run under VM/XA. This recommendation has moderate cost and acceptable risk. The driving force for the conversion schedule is when IBM is expected to drop support of VM/SP, the currently supported operating system. This date from IBM is June 1989. We cannot be finished with the conversion by that date, even with an FY89 start. OIT however, can assume this support itself for a certain amount of time after IBM drops support, but this self-support must be of short duration. The longer we go without IBM support, the greater the risk of unacceptable system outages. Normally we would not incur this type of risk but we believe there are no viable alternatives.

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Attachment A

There is a further concern. There is a potential for significant workload increases in the early 90s. Should this materialize, a computer upgrade would be necessary. This upgrade cannot be accomplished without converting GIMS-III to VM/XA. Thus, the sooner we begin the conversion, the sooner we will be in a position to accomplish this upgrade if needed.

The Delta Data terminals also must be completely replaced before VM/XA is adopted. The Delta Datas are inextricably tied to VM/SP. Moreover, the acquisition of new terminals and the maintenance of the existing ones are expected to be problems of critical magnitude well before 1993. OIT believes the Delta Datas must be replaced by 1991 at the latest under any scenario, even a 1993 RMS IOC. The approximate cost for this replacement is \$6.3 million. The timing of the replacement is not tied to any GIMS replacement or conversion work and should be started as soon as possible.

3. Question: "Can we maintain an older host system through 1995 to accommodate CAMS and other DA data on GIMS? At what cost?"

Response: For the CAMS system, no. OIT cannot maintain the VM/SP operating system through 1995 without IBM support. As we indicated previously, we are able to undertake support for a limited time of VM/SP after IBM drops support for it in June, 1989. We do not have the resources to assume this support role through 1995.

In addition, if the workload expansion currently projected by COMIREX is accurate, the computer will have to be upgraded in 1991. Remaining on the VM/SP operating system will not allow an upgrade at any cost.

DA GIMS applications run on a different GIMS system, namely GIMS-II. GIMS-II runs under a different IBM operating system, MVS/XA, than does CAMS. This operating system will be supported for the foreseeable future by IBM. Thus, DA GIMS application conversion issues are not germane to the CAMS issue.

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25 May 1988

MEMORANDUM FOR: EXDIR & Comptroller

FROM: Chairman, COMIREX

SUBJECT: CAMS P/S Extension Initiative

1. The original IOC date for RMS has changed from FY93 to FY95. As a result, I am concerned about the operational durability of the CAMS Processing Segment (P/S) beyond the originally anticipated FY93 date. OIT estimates that certain elements of the current CAMS architecture limit CAMS effectiveness to, at best, the original FY93 plan. Thereafter, the risk of degraded performance and maintenance shortfalls will become unacceptable. They recommend initiating a system architecture upgrade now that will enable CAMS to operate until the FY95 RMS IOC.

2. OIT has identified the minimum hardware and software upgrades required to extend CAMS into 1995, or later if necessary. These upgrades have been submitted for consideration as the "CAMS Extention Initiative (CEI)," an initiative that will cost approximately \$19.0 million from FY89 through FY94. This cost includes \$3.9 million as an unfunded requirement in FY89. The major changes required are the replacement of the Delta Data terminals and the conversion of the CAMS application and the GIMS-III DBMS so that CAMS can move to the new VM/XA operating system. By the end of FY91, IBM will no longer support the current the VM/SP operating system, making it extremely difficult and highly risky to maintain. It is also becoming more and more difficult to acquire Delta Data terminals, with the likelihood that it will be impossible to do so perhaps as early as 1991. Moreover, if CAMS does not move to VM/XA, the P/S will be unable to run on the larger IBM computers that may be required to process the workload anticipated in the mid-90s.

3. I fully support OIT's request for funding the CEI. The risks represented by a frozen and unsupported architecture are unacceptable to me and to the imagery Intelligence Community. CAMS must be responsive to changing conditions in the imagery world:

-- it must continue around-the-clock availability at a high

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Attachment B

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level;

- its performance must be responsive to the large population of Intelligence Community users;
- it must be able to incorporate changing requirements as changes are made to the collection constellation and the corresponding imaging workload;
- it must support the development of more complex imagery collection strategies, particularly in support of INF treaty monitoring.

4. Of concern to me also is the SSCI-recommended reduction in the FY89 CAMS budget of \$2.0 million. Because the impact of this reduction would be to leave the P/S unable to support COMIREX's PRISM management capabilities, our response should be quick and strongly negative. The SSCI should be advised that, given an RMS IOC date of 1995, the P/S has seven years of life remaining.

5. My staff and I are prepared to assist you both in conserving the FY89 CAMS budget at its present level and in supporting the acquisition of additional funds for the CEI. Please let me know how we can help.

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Attachment C

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19 May 1988

MEMORANDUM FOR:

VIA:

FROM:

SUBJECT: CAMS FY89 UNFUNDED-Revision 1
CAMS LIFE EXTENSION INITIATIVE
FAN 4006

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DESCRIPTION:

The current hardware and software architecture of the CAMS P/S system is estimated to be technically viable through, at best, FY93. Recent projections reportedly move the RMS IOC date from FY93 to FY94 or perhaps even FY95. As a result, the CAMS System must be supportable by OIT through FY94, and probably into FY95, substantially longer than expected. As a consequence it must also be adaptable to changing community requirements for the management of new and improved collection systems; to support more complex imagery strategies, particularly for INF treaty monitoring; and, as well, to handle vastly increased volumes of collected data. The Program is at risk because it uses hardware (Delta Data Terminals) and software (GIMS III) that are incompatible with the modern operating system (VM/XA) that OIT plans to install next year. In addition, OIT is finding it more difficult to acquire and to maintain Delta Data Terminals, with a strong likelihood that it will be impossible to do so perhaps as early as FY92.

REQUIREMENT:

The CAMS Program must modify the CAMS application software to run under VM/XA, provide funding to OIT/EG for the work required to modify GIMS III DBMS software under VM/XA, develop a man machine interface for a 3270 workstation, replace existing Delta Data Terminals and communications, and upgrade the CAMS COMTENS to support 3270 workstations. The initiation of these tasks in FY89 is unfunded and will cost \$3.9 million.

IMPACT OF FUNDS NOT BEING PROVIDED:

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The CAMS Life Extension initiative will be delayed, risking serious, prolonged, and possibly catastrophic operating system outages during intelligence crises or affecting COMIREX's ability to support treaty monitoring activities. Work must start in FY89 in order to convert CAMS and GIMS-III to VM/XA by the end of FY91, at the latest. At the latter date, IBM, and CIA, will be totally committed to VM/XA and IBM will no longer support the VM/SP HPO operating system. Without IBM's support, it will be extremely difficult to debug and to repair complex operating system problems.

Moreover, if CAMS is not provided the funding to convert to VM/XA now, the system will be unable to run on the larger IBM computers that may be required to process the known and anticipated expanding workloads of the mid-90s. CAMS, a system that is only four years old at this point, will be frozen and unable to accommodate workload increases.

CAMS LIFE EXTENSION INITIATIVE
(COST IN \$ MILLIONS)

TASK	FY89	FY90	FY91	FY92	FY93	FY94
MMI/CAMS CONVERSION STUDY	.2					
WORKSTATION MMI(9/89 IOC)	.2	.6				
GIMS TO VM/XA(9/90 IOC)	1.4	1.5				
CAMS TO VM/XA(9/91 IOC)	1.3	1.5	1.4			
WORKSTATION/COMMO <i>note 356</i> (Replace 300 @ \$15K)	.6	1.9	2.0			
COMTEN MIM REPLACEMENT (50 @ \$16K)	.2	.3	.3			
NEW COMTEN CPUs			1.0			
IBM CPU UPGRADE			1.3	1.2	1.2	1.2
	<u>3.9</u>	<u>5.5</u>	<u>6.0</u>	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>



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Attachment C

CAMS PROGRAM BUDGET FY89-94

NONPERSONAL SERVICES (\$M)

<u>SERVICES</u>	<u>89</u>	<u>90</u>	<u>91</u>	<u>92</u>	<u>93</u>	<u>94</u>
o Hardware Purchase & Rental	6.9	6.9	6.8	6.1	6.0	6.0
o Hardware Maintenance & S/W Licenses	1.6	1.6	1.4	1.4	1.5	1.5
o Contractual Services	10.8	9.7	9.9	11.8	11.8	11.8
o COMIREX Allocation	1.3	1.3	1.3	1.3	1.3	1.3
Total NPS Funding	\$20.6	19.5	19.4	20.6	20.6	20.6
CEI Initiative	3.9	5.5	6.0	1.2	1.2	1.2
	\$24.5	25.0	25.4	21.8	21.8	21.8

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DDA 88-1141

27 May 1988

MEMORANDUM FOR: Director of Information Technology

FROM: R. M. Huffstutler
Deputy Director for Administration

SUBJECT: Support of the CAMS System

1. I have read the 16 May memorandum from [redacted] describing the unfunded requirement for the CAMS Life Extension. I discussed this requirement with the Comptroller. We agree on the following: the CAMS Life Extension is a part of the larger issue of the CAMS for the 1990's and measures which must be undertaken to extend the CAMS Life are related to the planned IOC of the new system. I personally believe that the Requirements Information System (the initial segment of CAMS for the 1990's) will not be available before FY 95 and could be later. With this in mind, will you please revisit your funding profiles for the CAMS Life Extension initiative. How would they change if the RMS delivery is delayed beyond 1994? What alternative profiles do we have for FY 1989 through 1992, e.g., when do we have to convert the GIMS System and how long will the Delta Data terminals last? Can we maintain an older host system through 1995 to accommodate CAMS and other DA data on GIMS; at what cost?

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2. It is the intention of the Comptroller to raise this issue at the EXCOMM offsite in mid June. Is it sufficient for those purposes to have a range of unfunded cost estimates for FY 89 depending on assumptions about your funding profile. Please respond with this additional information by 7 June 1988.

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[redacted]

R. M. Huffstutler

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